Weather Services in Support of Natural Disaster Mitigation

C Y Lam
Hong Kong Observatory
Hong Kong, China

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Sorry, I cannot come for health reasons.

Please listen to M C Wong.

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From Time To Time …

Disaster strikes

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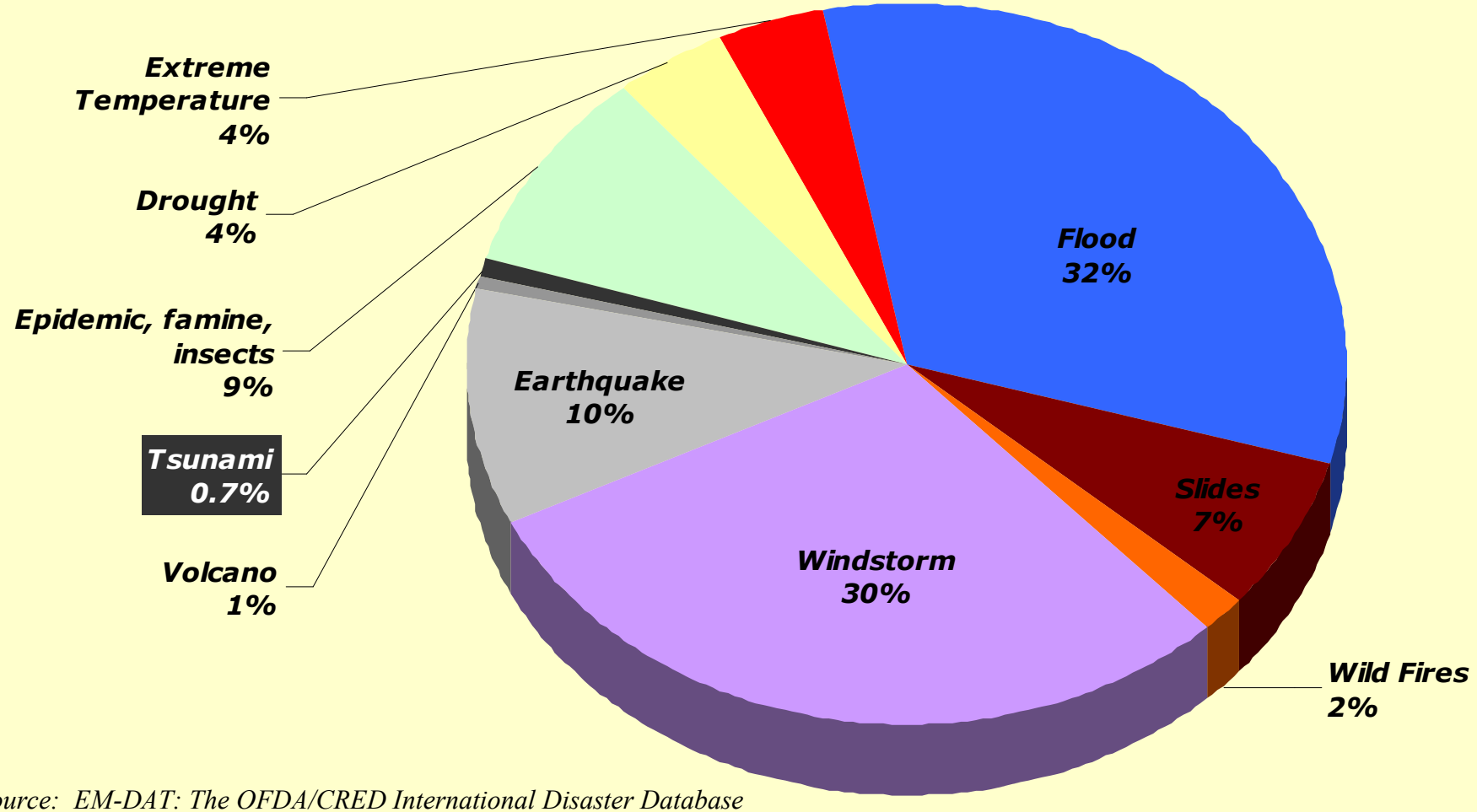
Nearly 90% of disasters are weather-related



Source: EM-DAT: The OFDA/CRED International Disaster Database

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United Nations
Hyogo Framework For Action 2005-2015

- .....
- Identify, assess and monitor disaster risks and **enhance early warning**
- .....
- .....
- .....

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Number of People Affected by Natural Disasters

	Total
1984 – 1993	1.63 trillion
1994 – 2003	2.58 trillion

+59%

Source: International Federation of Red Cross and Red Crescent Societies

World Disasters Report 2004

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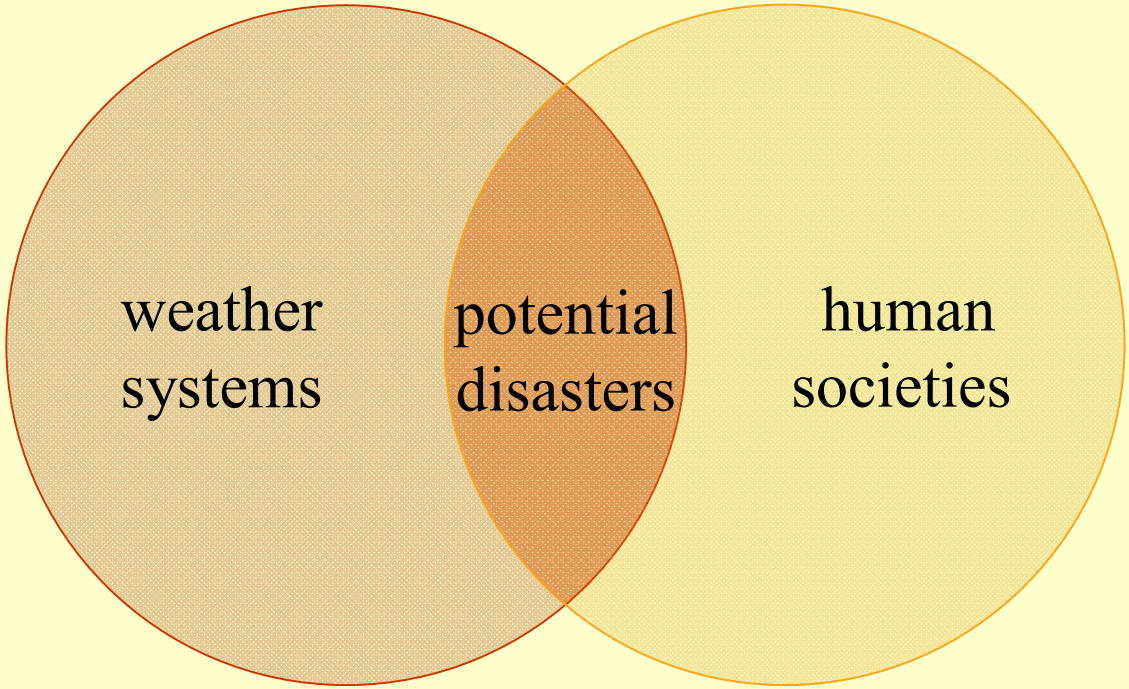
Weather systems interact with human societies to give rise to disasters



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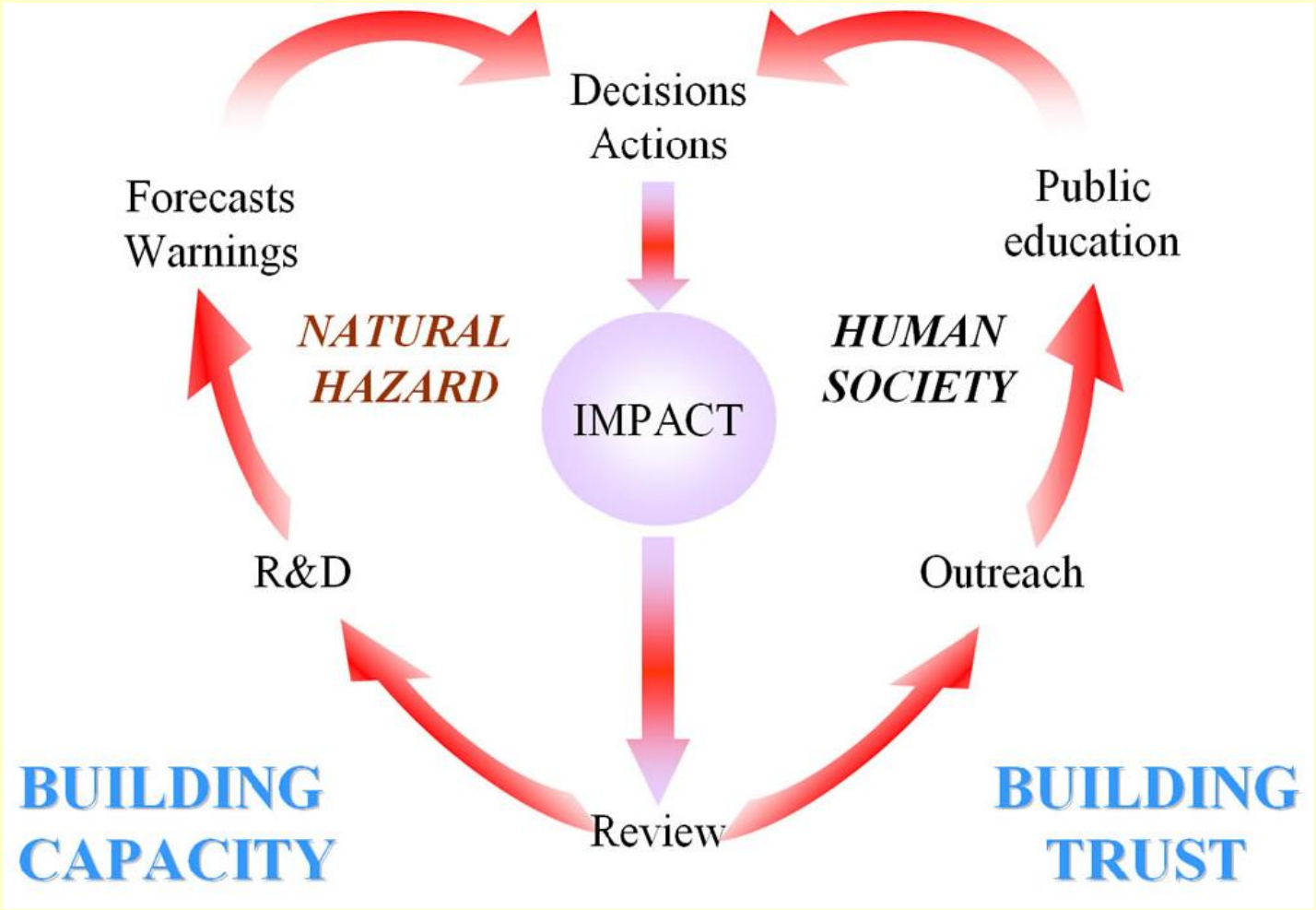
NMHSs have to work on both science and human aspects



Besides being accurate, effective weather warnings should be:

I. Relevant
II. Timely
III. Effectively delivered
IV. Capable of prompting actions
V. 'Graded' to trigger matching actions
VI. Evolving with changing needs
VII. Trusted

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I. Warnings should be relevant

- Meet the needs of the users
- Depend on climate, geography, culture, history and degree of urbanization
- Cover temporal spectrum from “now” to “decades”

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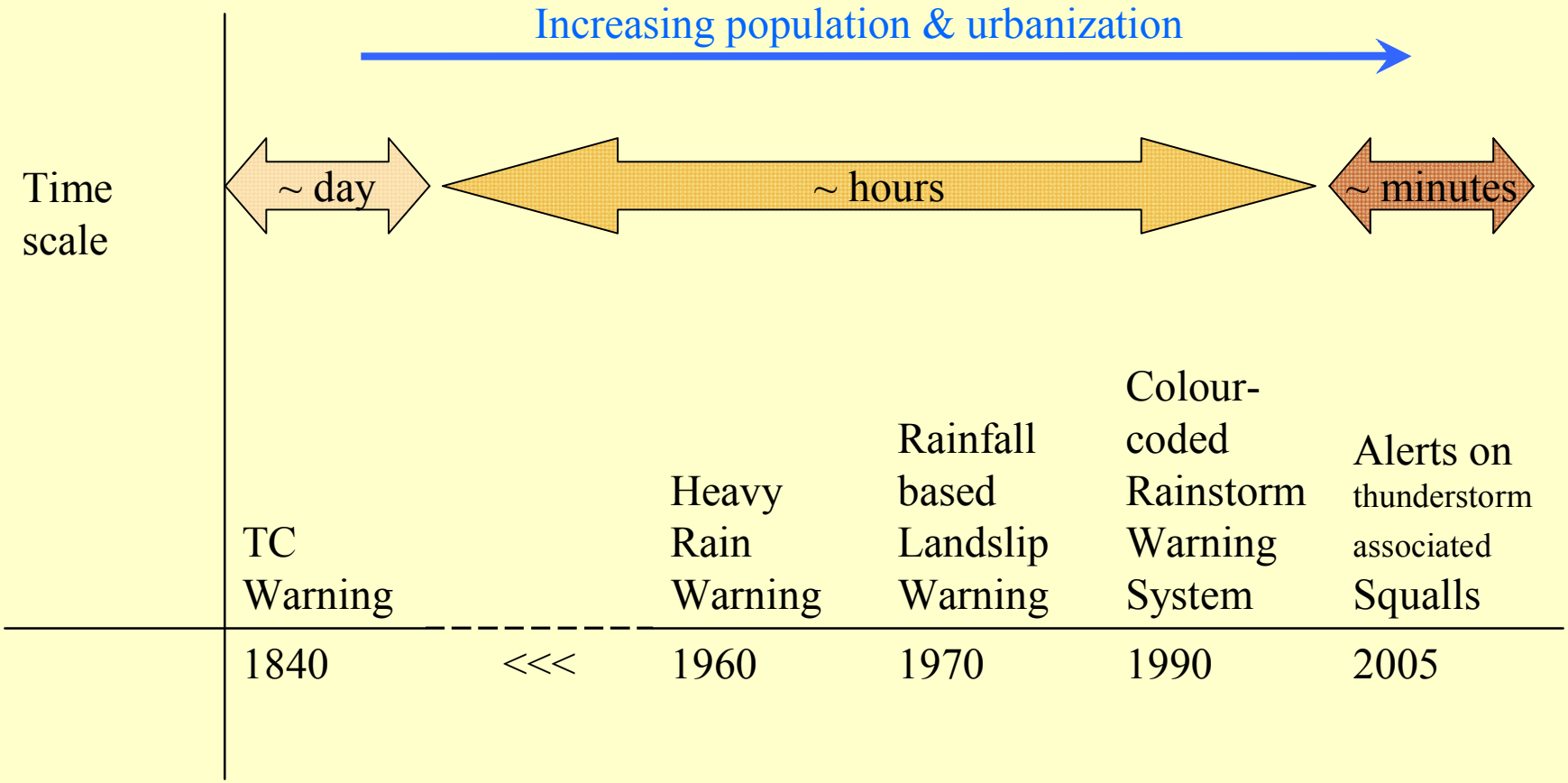
Example 1: To meet user's needs, forecast & warning time scale decreases



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Example 2: Caring service to meet needs of ageing population living alone or chronically ill in Hong Kong

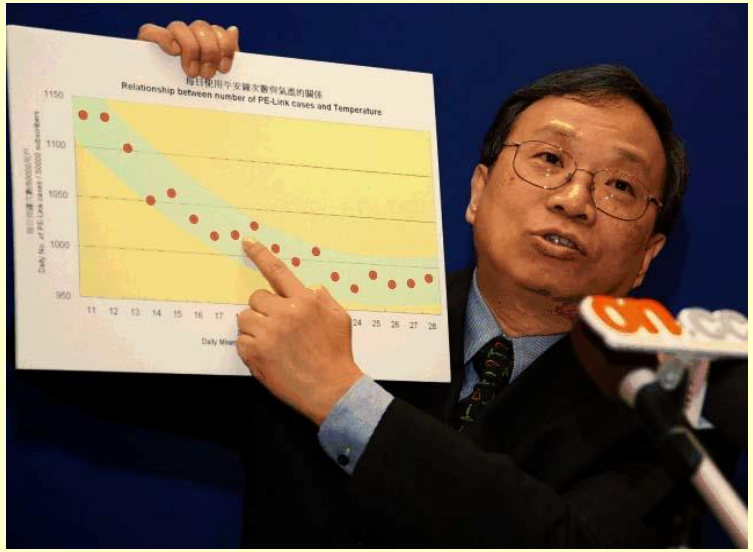
- Urbanization & ageing
- Weather impact increasing


Cold snap death toll hits 28

Coal poison couple lucky to be alive

Very Hot and Cold Weather Warnings set up in 1999

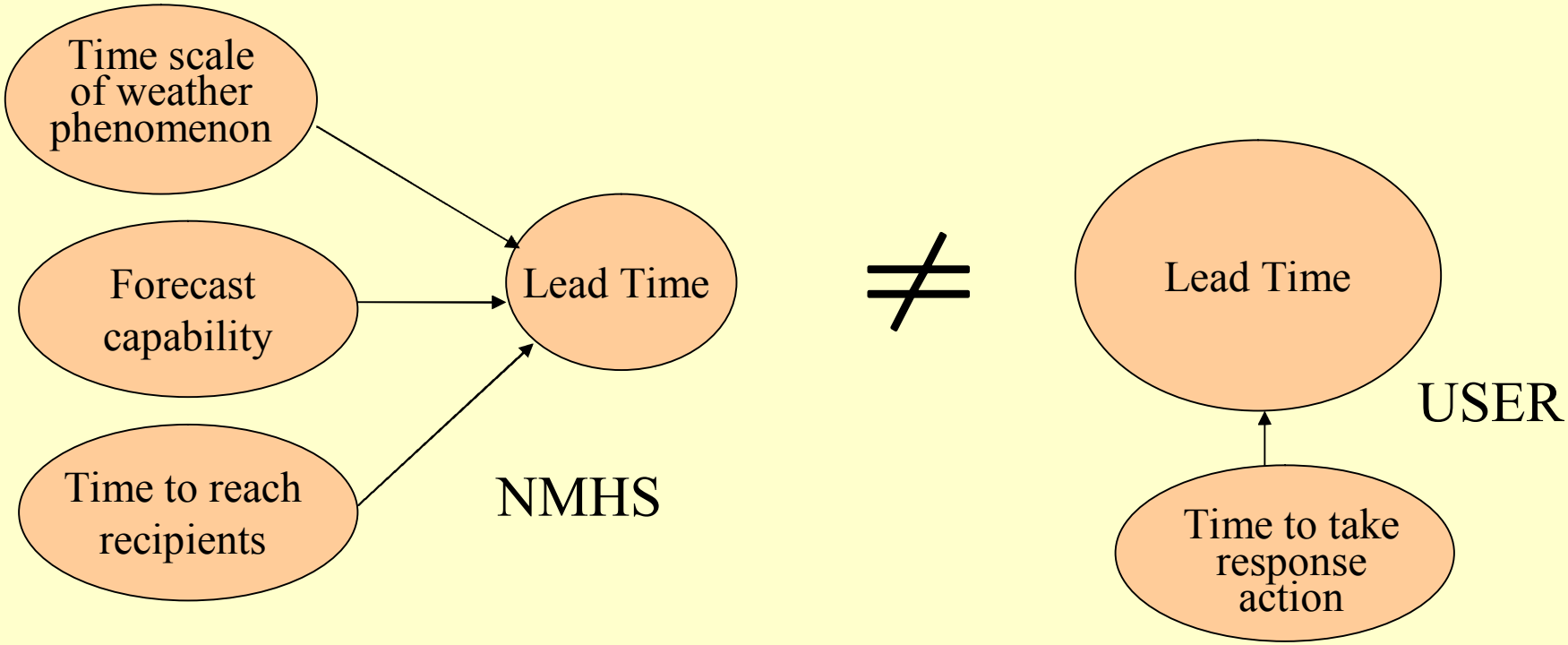
→ relevant and caring service



同心展關懷 2005–07
caringorganisation
Awarded by The Hong Kong Council of Social Service
香港社會服務聯會頒發

II. Warnings should be timely

- Depend on how the recipient evaluates the product
- User expectation managed through education and outreach



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III. Effective delivery of warnings

- Physical vs communication of meaning
- Caters for recipients spanning a wide spectrum
  - Less-educated or under-privileged
    - Simple and easy to understand
    - Visual symbols, numbered- or colour-coded warning status to trigger actions
  - Sophisticated
    - Mobile phone, Internet
    - Real-time observational data to individual risk assessment and decision making

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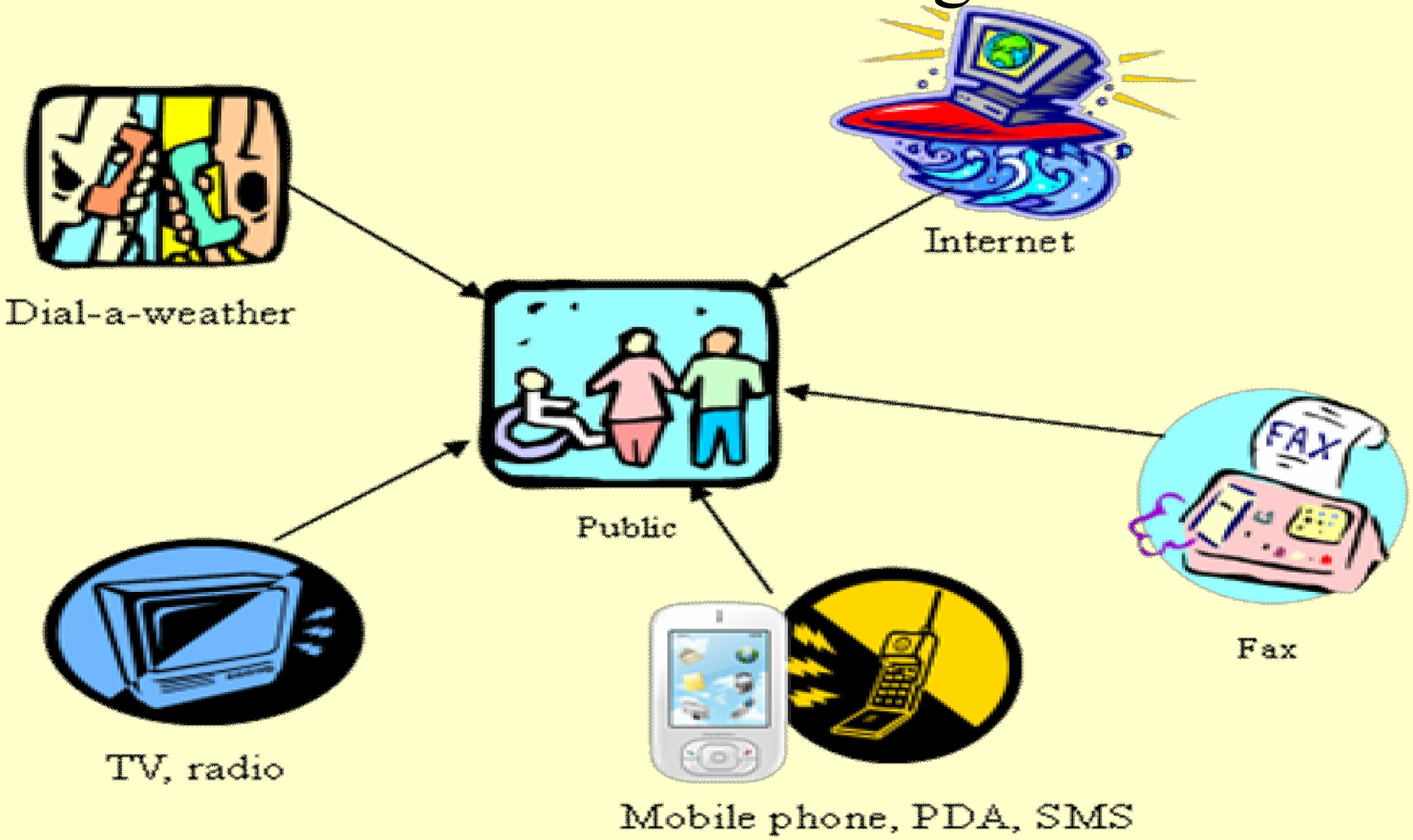
Delivery via diverse and multiple means to communicate weather information of different volumes and degrees of detail



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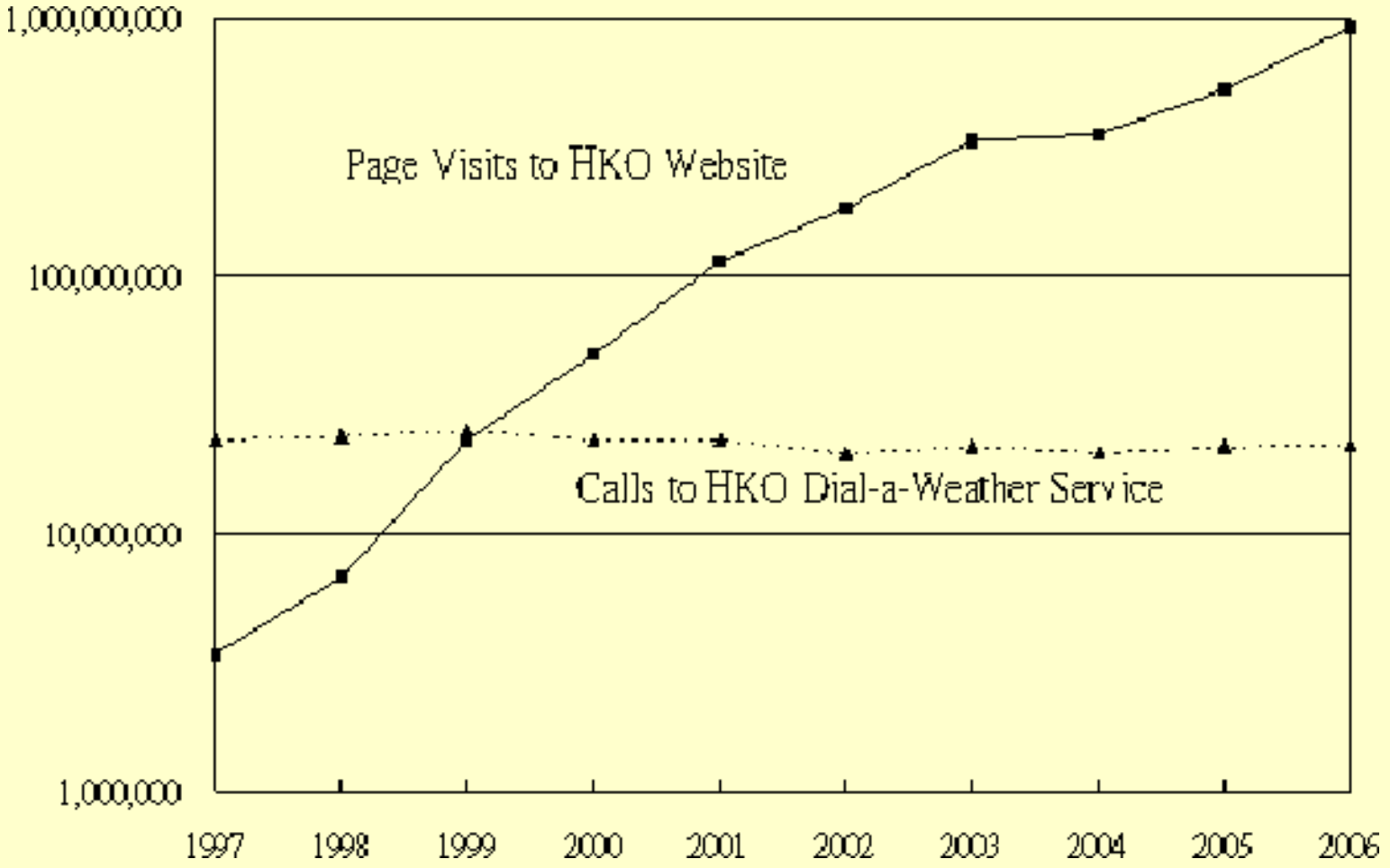
Usage of phone for weather information remained steady in spite of rise in internet usage



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IV. Warnings as action "trigger"

Individuals to understand warning and take response action


THE GOVERNMENT OF
THE HONG KONG
SPECIAL ADMINISTRATIVE REGION

CONTINGENCY PLAN FOR NATURAL DISASTERS

(INCLUDING THOSE ARISING FROM

Emergency Support
Security Bureau
Government Secreta
January 2004

長者安居之訊

長者安居服務協會出版 ● 督印人：馬錦華 ● 印製：6,600 份 二〇〇五年十二月號 第十八期

與長者共抗寒流的背後

菁安跨愛心提提您

特連送贈寒衣部隊

禦寒有術

Private sector /emergency response units:

To incorporate warning and information into their response plans and decision-making processes

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V. "Graded" Warnings

- Enable the community to build up its response commensurate with the risk involved
  - Rainstorm warning

possibility of rainstorm of significant impact

students stay put (home or school)

all stay put and outdoor workers seek shelter indoors

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VI. Warnings must evolve to survive

The built environment	Expectation of the Society
Warning System	
Meteorological Science	Communication

Factors determining the form of a warning system change with time

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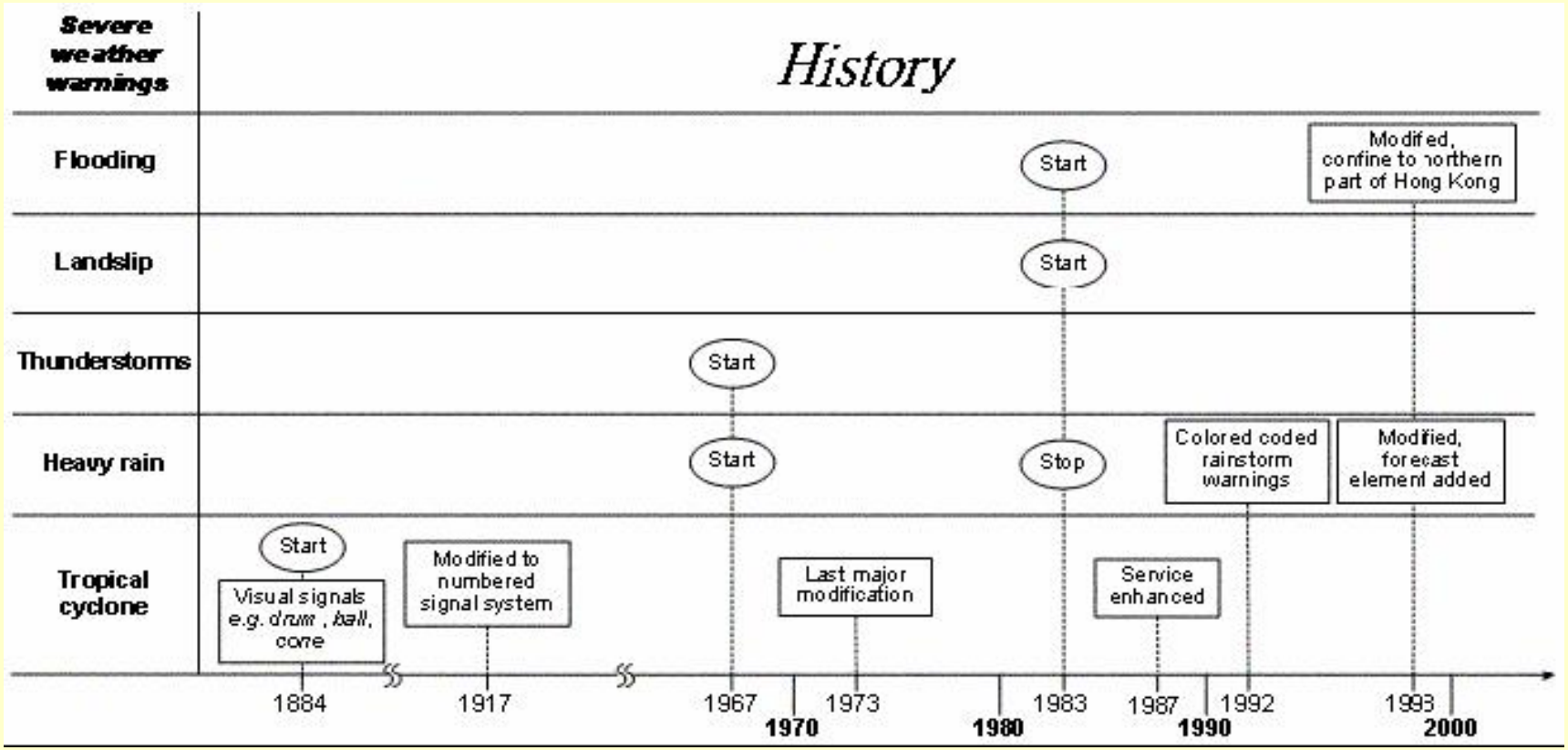
Evolution of warnings in Hong Kong



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VII. People only take action if they trust the warnings

+ TRUST

Warnings

Heading home for safety

Q: How to gain this trust
when warnings are issued
only occasionally?

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Well-run Public Weather Service as the builder of trust

Establish/ maintain scientific capabilities

Build up credibility through education and outreach

Assure integrity & readiness on a daily basis

Establish good connections with users

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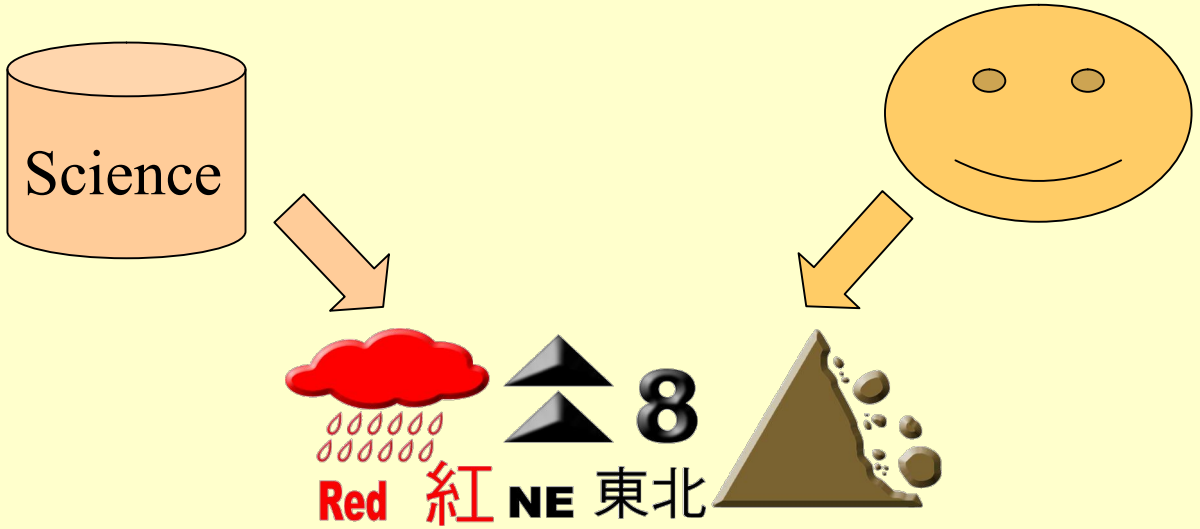
Conclusions

- **Effective Warning system :**

  Led by needs
  Supported by science
  Disseminated by diverse multiple means
  Promoted by reaching out
  Trusted by users



- **Well-run PWS ▸▸▸ Brand ▸▸▸ Trust ▸▸▸ Action**

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Thank You